WHAT IS CLAIMED IS:

1.   An apparatus for correcting a scanning error in a flatbed scanner, the apparatus comprising:

a white shading plate having a black patch;

a reading module accommodating reading of said white shading plate and said black patch; and

a controller comparing information of said black patch read by said reading module with a predetermined reference value to correct the scanning error in the flatbed scanner.

2.   The apparatus of claim 1, further comprised of said controller correcting the scanning error by using information of at least one of the edge lines of said black patch read through said reading module and information of at least one of the intervals of said black patch.

3.   The apparatus of claim 1, further comprised of said controller correcting a scan start line using the result of comparing a predetermined reference value with the number of pixels corresponding to an interval by which said reading module is moved from a top edge line of said black patch read through said reading module to a predetermined point.

4.   The apparatus of claim 3, further comprised of the predetermined reference value

2   being the number of pixels corresponding to a distance from the top edge line of said black patch to

3   the scan start line.

1   5.   The apparatus of claim 1, further comprised of said controller setting a scan region

2   based on the detection of a rightmost edge line of said black patch through said reading module and

3   a position of a first pixel being read obtained during reading of said white shading plate to correct

4   a scanning error for the position of the first pixel being read.

6   6.   The apparatus of claim 5, further comprised of said controller setting a scan region

    accommodating when the read position of the first pixel read through said reading module is beyond

    a point set by a predetermined reference value, the point set by the predetermined reference value

    being the point where the first pixel is read, and

    said controller setting a scan region accommodating when the read position of the first pixel

    is within the point set by the predetermined reference value, the first pixel can be read at the position

7   where the first pixel is read.

1   7.   The apparatus of claim 1, further comprised of said controller setting a scan region

2   based on the detection of the top edge line and a bottom edge line of said black patch read through

3   said reading module and an interval by which the reading module is moved from the top edge line

4   to the bottom edge line.

8. The apparatus of claim 7, further comprised of said controller setting the scan region accommodating a skew of said reading module being corrected by comparing the interval by which said reading module is moved with a predetermined reference value.

9. The apparatus of claim 1, further comprised of said controller adjusting a scan rate based on predetermined right and left intervals with respect to the center of said black patch read through said reading module.

10. The apparatus of claim 9, further comprised of said controller detecting the size of a region scanned by said reading module over the entire scan region based on a difference detected by comparing the predetermined right and left intervals with a predetermined reference value to adjust the scan rate.

11. The apparatus of claim 1, with the predetermined reference value being set based on a pattern of said black patch.

12. The apparatus of claim 1, further comprising a memory for storing the predetermined reference value.

13.   The apparatus of claim 1, further comprising a transparent glass on which a document is placed; and

a buffer storing an image read through said reading module,

with the controller controlling the output of the image stored in the buffer to correct the scanning error.

14.   The apparatus of claim 1, further comprised of said black patch including a center dividing said black patch into two equal patterns, said black patch being symmetric about the center line.

15.   A method for correcting a scanning error in a flatbed scanner with a white shading plate including a black patch, the method comprising:

detecting information related to said black patch and an interval moved by a reading module, based on information obtained by reading said black patch using said reading module; and

correcting the scanning error according to the result of comparing the detected information related to said black patch with a predetermined reference value.

16.   The method of claim 15, with information related to said black patch being information of at least one edge line of said black patch and information of at least one interval being

3   detected during the detecting step.

1   17.   The method of claim 15, further comprised of when an interval moved by said reading

2   module on said black patch in a vertical direction after detecting a top edge line of said black patch

3   is detected, the scanning error is corrected based on a difference detected by comparing the interval

4   with the predetermined reference value.

18.   The method of claim 17, further comprising a scanning start line being corrected

based on the detected difference.

19.   The method of claim 15, further comprised of when a position at which a first pixel

is read is detected while reading said white shading plate after detecting a rightmost edge line of said

black patch, the scanning error is corrected by setting a scan region according to the result of

comparing the position at which the first pixel is read with a predetermined reference value during

5   the correction of the scanning error.

1   20.   The method of claim 15, further comprised of when an interval by which the reading

2   module is moved from a top edge line of said black patch to a bottom edge line of said black patch

3   is detected, a scan region is set based on the result of comparing the interval by which the reading

4   module is moved with the predetermined reference value.

1   21.   The method of claim 15, further comprised of when predetermined right and left

2   intervals with respect to the center of said black patch are detected, a scan rate is adjusted based on

3   the result of comparing each of the detected predetermined intervals with a corresponding

4   predetermined value.

    22.   A method, comprising:

    detecting information with respect to the pattern of a black patch on a white shading plate

included in a scanning apparatus; and

    comparing the information detected of the pattern of said black patch with a respective

predetermined reference value to correct scanning errors, the respective reference value set according

to the pattern of said black patch.

1   23.   The method of claim 22, with the detecting information of said black patch further

2   comprising of detecting of edge lines of said black patch.

1   24. The method of claim 22, with the detecting information of said black patch further

2   comprising of checking the presence of black and white pixels while moving a reading module of

3   said scanning apparatus.

1   25.   The method of claim 22, with the detecting information of said black patch further

2   comprising of checking whether an interval of said white shading plate between a first edge of said

3   black patch and a second edge of said black patch is detected to have white pixels.

1   26.   The method of claim 25, with the information further comprising of extracting the

number of pixels corresponding to an interval said reading module is moved vertically on said black

patch.

1   27.   The method of claim 26, with the step of comparing the information detected of said

black patch with a respective predetermined reference value to correct scanning errors, further

comprising of comparing the number of pixels corresponding to the interval said reading module is

moved vertically on said black patch with the respective predetermined reference value being the

5   number of pixels a reader moves vertically from a top edge of said black patch to the top edge of a

6   transparent glass of the said scanner.

1   28.   The method of claim 23, further comprising:

2   detecting a first pixel being read while reading of said white shading plate; and

3   detecting a pixel difference between where the first pixel is read and the point where the edge

4   line has been detected.

1   29.   The method of claim 28, further comprising:

2   comparing the difference between where the first pixel is read and the point where the edge

3   line has been detected to the respective predetermined reference value;

4   setting a scan region according to the distance between the edge line and the respective

predetermined reference value when the pixel difference is greater than the respective predetermined

reference value; and

setting the scan region from the point where the first pixel is read when the respective

predetermined reference value is greater than the pixel difference.

30.   The method of claim 29, with the respective predetermined reference value of the

information of the first pixel read and the point where the edge line has been detected being a

3   distance from the rightmost edge of said black patch and rightmost edge of said transparent glass.

1   31.   The method of claim 23, with the step of detecting information of said black patch

2   further comprising of checking the number of pixels corresponding to an interval the reading module

3   is moved in the vertical direction from the edge line when all edge lines are white pixels.

1   32.   The method of claim 31, with the step of comparing the information further

2   comprising:

3   comparing of the number of pixels checked with the respective predetermined reference

4   value; and

5   setting a scan region to correct skew error according to the comparing of the number of pixels

6   checked with the predetermined reference value.

      33.   The method of claim 32, with the respective predetermined reference value for

correcting the skew error being a certain distance of a region of the pattern of said black patch.

      34.   The method of claim 22, further comprising adjusting a scan rate according to the

comparison of the information detected of said black patch with the respective predetermined

reference value.